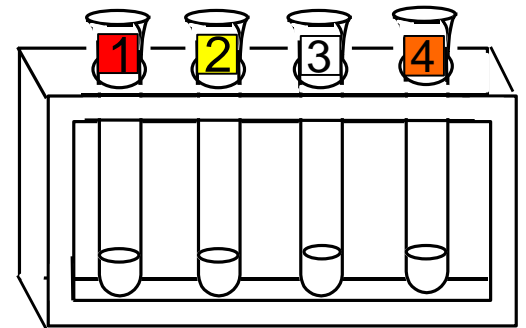


Starch Breakdown



Procedure:

1. Always wear safety goggles.
2. Rinse the 4 test tubes in the sink.
3.
 - Add 10 drops of glucose solution to test tube 1.
 - Add 10 drops of sucrose solution to test tube 2.
 - Add 10 drops of starch solution to test tube 3.
 - Add 10 drops of starch solution to test tube 4. Also add 10 drops of amylase to test tube 4.
4. Add 5 drops of the blue Benedict's solution to each test tube. Observe the color of each test tube.
5.
 - Look to see what time it is and set all 4 test tubes into the hot water beaker.
 - **Return each test tube to the rack as soon as the solution changes to an orange or yellowish color.**
 - After 2 minutes total, return all test tubes to the rack.
 - Which test tube changes color first?
 - Which test tubes stay blue?
6. Use the brush to clean and rinse the test tubes in the sink.



What is starch?

How does saliva affect starch?

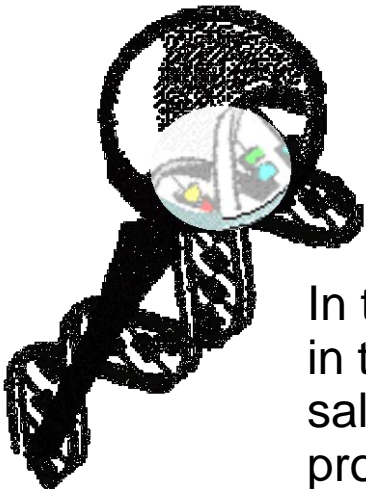


A Closer Look:

Glucose is a simple molecule made of one sugar unit.

Sucrose, or "table sugar," is made of two different sugar units, glucose and fructose, bonded together.

Starch is made up of hundreds of glucose sugar units, bonded together in long chains. It occurs in many foods, such as bread, pasta, and vegetables.



Benedict's solution turns orange when it reacts with individual glucose molecules. It does not react with the bonded glucose molecules in sucrose or starch.

In the experiment, you added amylase to the starch in test tube 4. Amylase is an enzyme found in your saliva (yes, your spit). Enzymes are reusable proteins that speed up specific chemical reactions. Amylase helps break down starch into separate glucose units which makes it easier to digest. This reaction is indicated by the color change in the Benedict's solution.